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1/9/2004
Date

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**
**BOARD OF PATENT APPEALS AND INTERFERENCES**

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| In re the application of: Nanette C. Jensen, et al. | Confirmation: 9811 |
| Serial Number: 09/855,208 | Art Unit: 2857 |
| Filing Date: May 14, 2001 | Examiner: West, Jeffrey R. |
| Title: SYSTEM AND METHOD FOR DETERMINING LIGHT SOURCE CURRENT | Docket No.: 10013325-1 |
| | Appeal Number: ______________ |

# AMENDED APPEAL BRIEF UNDER 37 CFR §1.192

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an appeal from the decision of Examiner Jeffrey R. West, Group Art Unit 2857, of June 3, 2003, rejecting claims 1-20 in the present patent application and making the rejection final.

## I. REAL PARTY IN INTEREST:

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249, Houston, Texas 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

## II. RELATED APPEALS AND INTERFERENCES:

There are no other appeals or interferences known to appellant that will directly affect or be directly affected by or have a bearing on the Board's decision in the present pending appeal.

## III. STATUS OF CLAIMS:

Claims 1-20 are currently pending in the present application. The Final Office Action mailed on June 3, 2003 rejected claims 1-20 under 35 U.S.C. §103(a) as being unpatentable over US Patent 5,995,243 to Kerschner et al. in view of US Patent Application Publication No. 2001/0026011-A1 to Roberts et al. and US Patent 4,982,203 to Uebbing et al. Applicants appeal the decision of the Examiner in rejecting claims 1-20. For the reasons set forth herein, Applicants respectfully submit that the rejection of the pending claims 1-20 should be overturned by the Board of Patent Appeals.

## IV. STATUS OF AMENDMENTS:

With respect to claims 1-20, all amendments submitted with respect to such claims before the issuance of the Final Rejection have been entered.

## V. SUMMARY OF INVENTION:

In one embodiment relevant hereto, the present invention includes determining an optimum current that is to flow through each of the light sources 125 (FIG. 1) that may be light emitting diodes or other light sources in a scanner as depicted in FIG. 1. In this respect, the light sources 125 generate light that illuminates a scan target that may be, for example, a sheet of paper, *etc.* The scanning of a document, for example, is accomplished by repeatedly scanning "lines" of pixels of the document. That is to say, the sensors 131 are arranged in a line within the sensor array 129 to acquire image information in lines as the document is moved relative to the sensor array 129 or vice versa. As illustrated in FIG. 1, to scan a line of pixels from the document, each of the light sources 125 is consecutively illuminated for a predetermined exposure time, thereby illuminating the

document to be scanned. The light sources may comprise, for example, red, green, and blue light emitting diodes. The exposure time for the light sources may be independently set for any time period desired and is altered more than once during the calibration of the scanner 100.

For each of the light sources 125, each of the sensors 131 absorbs the light reflected from the document and generates a sensor value therefrom. The sensor values are then read out of the sensor array 129 and accessed by the processor 103 via the sensor signal processing interface 116.

In order to scan the hard copy document to obtain a faithful digital reproduction, the scanner 100 is calibrated from time to time for optimal operation. To calibrate the scanner 100, the scanner calibration logic 149 within the scanner is executed by the processor 103. When executed, the scanner calibration logic 149 executes several subroutines to ensure proper operation of the scanner 100. With reference to FIG. 5, a flow chart is shown that depicts an example of one of these subroutines. Specifically, a current subroutine 206 is shown that is executed in conjunction with scanner calibration logic 149 to determine an optimum current that is to flow through each of the light sources 125.

Beginning with block 280, the current subroutine 206 first determines the maximum exposure time for each colored light source 125 employed in the scanner 100. Note that the maximum exposure time may depend upon various factors including the speed at which the document progresses through the scanner 100 (FIG. 1) and the resolution of the sensors 131 (FIG. 1) employed to obtain the images from the document, *etc*. Thereafter, in block 282, the exposure time for each of the light sources 125 is set to the maximum allowable.

Then, in block 284 the magnitude of the current that flows through the respective light sources is set to a minimum value generated by an accompanying current control circuit in the scanner 100. Then, the current subroutine 206 moves to block 286 in which a first scan of the sensors 131 is performed and the sensor values obtained therefrom are stored in memory 106 (FIG. 1). Thereafter, in block 288, all of the currents that flow through the respective light sources 125 that are not set to a finalized value are incremented by a predetermined amount by manipulating the current control circuit. Note that the first time that block 288 is encountered, all of the light emitting diode currents will not be set to a final value as the optimal current level for each has yet to be determined.

The current subroutine 206 then proceeds to block 290 in which a subsequent scan is performed of the sensors 131 and the corresponding sensor values are stored in the memory 106. Note that the newly determined current values from block 288 are applied to the light sources during the scan performed in block 290. Thereafter, in block 292 a loop is begun for each light source.

In block 294, the subsequent sensor values are compared to the first sensor values to determine whether the subsequent values are greater than the previous values by a predetermined percentage increase. Thereafter, in block 296, if the subsequent sensor values are greater than the prior sensor values by the predetermined percent increase, then the current subroutine 206 proceeds to block 298. On the other hand, if the percent increase has not been achieved in block 296, then the current subroutine 206 proceeds to block 300 in which the current for the present light emitting diode is set to the previous setting. Thereafter the current subroutine 206 progresses to block 298. In block 298, it is determined whether the comparison of block 294 has been performed for all of the light sources. If not, then the current subroutine 206 proceeds to block 302 in which the next light source is identified. Otherwise, the current subroutine 206 proceeds to block 304. Once the next light source is identified in block 302, then the current subroutine 206 reverts back to block 294.

In block 304, the current subroutine 206 determines whether all of the currents for each of the light emitting diodes and their corresponding colors has been set in block 300, or are at the maximum allowed current. If not, then the current subroutine 206 reverts back to block 288. Otherwise, the current subroutine 206 ends.

Thus, in one embodiment, the current subroutine 206 establishes the optimum current to flow through the respective light sources by starting at a low current value and increasing the currents in steps until a saturation of the sensors 131 is detected. Note that the percent increase that is compared with respect to block 296 may be, for example, eight percent or other value.

Alternatively, in an alternative embodiment, a different approach may be taken in which the currents applied to the sensors 131 are decremented. For example, initially in block 284, the currents may be set to a maximum and the unset currents may be decremented in block 288. In such case, in block 296, the current

subroutine 206 would detect a predefined percent decrease that indicates the saturation point of the sensors 131 has been identified.

## VI. CONCISE STATEMENT OF THE ISSUES PRESENTED FOR REVIEW:

The issues in this appeal are whether claims 1-20 are unpatentable under 35 U.S.C. §103(a).

## VII. GROUPING OF CLAIMS:

For purposes of this appeal, a single grouping is set forth that includes claims 1-20.

## VIII. ARGUMENT:

Claims 1-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over US Patent 5,995,243 to Kerschner et al. (hereafter "Kerschner") in view of US Patent Application Publication No. 2001/0026011-A1 to Roberts et al. (hereafter "Roberts") and US Patent 4,982,203 to Uebbing et al. (Hereafter "Uebbing"). For the purposes of the following argument, Applicants discuss the traversal of the rejection of claims 1-20 with a discussion of representative claim 1. It is noted that claims 7, 13, 19, and 20 include limitations similar in scope with those of claim 1, and that the remaining claims depend from claims 1, 7, or 13. Claim 1 provides as follows:

> 1. A method for determining a light output of a light emitting diode (LED) in a scanner, comprising:
>
> applying a first current to the LED to generate the light output of the LED during a first time period;
>
> obtaining a first measure of the light output of the LED during the first time period with a number of sensors in a sensor array;
>
> applying an altered current to the LED to generate the light output of the LED during a second time period;
>
> obtaining a second measure of the light output of the LED during the second time period with the sensors in the sensor array; and
>
> detecting a saturation of the sensors in the sensor array by comparing a difference between the first measure of the light output and the second measure of the light output with a predefined difference threshold.

Applicants respectfully submit that claim 1 patently distinguishes over, and is not rendered obvious by the cited combination of Kerschner, Roberts, and Uebbing.

A. <u>The Combination of References Fails to Suggest All of the Claimed Limitations.</u>

It is well settled law that a prima facie case of obviousness is established when the teachings from the prior art itself would appear to have shown or suggested the claimed subject matter to a person of ordinary skill in the art. <u>In re Rijckaert</u>, 9 F.3d 1531, 28 U.S.P.Q2d 1955, 1956 (Fed. Cir. 1993).

Claim 1 as amended includes the step of "detecting a saturation of the sensors in the sensor array by comparing a difference between the first measure of the light output and the second measure of the light output with a predefined difference threshold". With regard to this element, the Examiner contends:

> "...since Kerschner discloses comparing the light intensity to detect a condition of the sensors reaching a white point/level indicating a maximum white digital value, <u>and since it is well-known in the art that the saturation levels of the light sensors correspond to the maximum white level, and Applicant suggests a relationship between determining the saturation of a sensor and its corresponding white level,</u> on page 4, lines 4-6 (Figure 8), page 8, lines 27-32, page 9, line 30 to page 10, line 7, Kerschner also discloses using the comparison to detect when the white point/saturation level of the sensors is achieved." (Final Office Action, page 5, emphasis added).

As the above excerpts show, the Examiner has made an erroneous assumption that the cited references and the specification of the present application teach or suggest the "general knowledge" that a white point corresponds to a maximum intensity that sensors can measure before saturating. In other words, the Examiner assumes that detecting the condition of the sensors reaching a white point is the same as detecting a saturation level of the sensors. In doing so, the Examiner cites Kerschner and several portions of Applicants' specification.

For a proper rejection under §103(a), there must have been some teaching <u>in the prior art</u> to suggest to one skilled in the art that the claimed invention would have been obvious. <u>W.L. Gore & Associates, Inc. v. Garlock Thomas, Inc.</u>, 721 F.2d 1540, 1551 (Fed. Cir. 1983). On this point, the Federal Circuit has held

> The consistent criteria for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this [invention] should be carried out and would have a reasonable

> likelihood of success, viewed in light of the prior art. ... Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure.... In determining whether such a suggestion can fairly be gleaned from the prior art, the full field of the invention must be considered; for the person of ordinary skill in the art is charged with knowledge of the entire body of technological literature, including that which might lead away from the claimed invention.

In re Dow Chemical Company, 837 F.2d 469, 473 (Fed. Cir. 1988) (emphasis added).

Applicants assert that in order to establish a prima facie case of obviousness, the elements of the claims must be shown or suggested in the prior art, not Applicants disclosure. Applicant asserts that the rejection of the present claims is improper to the extent that the Examiner relies on the teachings of the present specification to generate a rejection rather than the prior art.

In addition to the fact that the Examiner erroneously relies on the teachings of the specification of the present application to support the instant rejection, the Examiner misinterprets the specification of the instant application as cited in the Final Office Action. Specifically, Applicants assert that detecting a "white point" associated with a particular sensor is not the same as detecting a saturation of a sensor as the Examiner assumes. For example, in one embodiment of the present invention, the detection of a saturation level is performed so that one can ensure that the white point is within the working range of the sensor and that the sensors are not saturated. Specifically, in Figure 8 of the present application (cited by the Examiner above), the flow chart describes a subroutine that verifies that an exposure time that was previously determined as described elsewhere in the specification does not result in the saturation or near saturation of any of the sensors for a maximum white value. In this respect, a process is undertaken in which exposure time is adjusted and the sensors are repeatedly scanned to determine an optimum exposure time in which all sensors are at least a predefined percentage away from saturation when a maximum white value is obtained for each of the sensors. In this process, malfunctioning sensors are disqualified from operation. Thus, the present application teaches that the white value is not actually the saturation value, contrary to the statements in the Office Action. (See Specification, page 18, line 15 through page 19, line 33).

In addition, Kerschner does not teach detection of a saturation level or that the white point is the same the saturation level as the Examiner contends. In fact, Kerschner does not even mention saturation of the sensors. Rather, Kerschner discusses performing a scan of white level reference marks and the sensor values obtained therefrom are compared to a predefined white value stored in a memory. If the sensor values do not equal the predefined white value, the duration of the pulse width applied to the LEDs is adjusted until the white value is achieved. Since there is inevitably process variation from sensor to sensor inherent in the manufacturing of sensors, there is no way of knowing whether any one of the sensors is saturated. Simply setting an exposure time so that predefined white values are achieved has no bearing on whether the sensors either are or are not saturated. That is to say, for some sensors, the exposure time may result in saturation, whereas in other it may not. In this respect, Kerschner teaches away from the concept of detecting the saturation level of the sensors as it does not take saturation of sensors into account, thereby leading one skilled in the art to believe that saturation of the sensors is not a concern in the operation of the scanner device.

Furthermore, the statement by the Examiner in the Final Office Action that the "Kerschner discloses comparing the light intensity to detect a condition of the sensors reaching a white point/level <u>indicating a maximum white digital value</u>" (Final Office Action, page 5, emphasis added) is irrelevant to the detection of saturation levels. The "maximum white digital value" is that obtained from an A/D converter that converts analog voltages from each of the sensors to a digital value. However, the analog voltages are amplified before being fed into the A/D converter. (See Kerschner, column 2, lines 15-16). In this respect, the "maximum white digital value" may correspond to any predetermined sensed value along the range of output of the sensor, depending upon the rate of amplification. Thus, the statement in the Office Action that "it is well-known in the art that the saturation levels of the light sensors correspond to the maximum white level" is not founded in any teaching of Kerschner. Rather, such as statement indicates that the Examiner does not understand the full teaching of Kerschner.

Essentially, by assuming that saturation levels correspond to white levels, the Examiner has effectively sidestepped the obligation to find a reference that suggests the feature of detecting a saturation point as claimed. Consequently, the Examiner has failed to set forth a prima facie case of obviousness under §103(a).

In addition, claim 1 also recites "comparing a difference between the first measure of the light output and the second measure of the light output with a predefined difference threshold." In addressing this limitation, the Office Action further states:

> "Kerschner also discloses comparing the output value to the predetermined threshold rather than comparing the difference between first and second light outputs to the threshold to alter the current values by a predefined percentage." (Final Office Action, page 5)

Thus, since the Examiner concluded that Kerschner did not show or suggest such a feature above, the Examiner states:

> Uebbing teaches a method and apparatus for improving the uniformity of an LED printhead by compensating for the degradation in light output of a plurality of LEDs (column 4, lines 66-68) comprising obtaining the light output measures of two different pulse-width values and comparing the difference between these values to determine the percentage increase, of the second measure relative the first measure, needed to meet the desired output level deviation/difference (in this case zero (column 5, lines 1-22)."

Applicants disagree with the above assertion. Uebbing merely teaches measuring the light output of LEDs at two separate times to determine a degradation of light output over the time period between measurements. (See Uebbing, column 6, lines 9-24). In this respect, Uebbing is not detecting a "percentage increase" between the two measurements, but the amount of degradation in the light output. In addition, Uebbing does not suggest determining "the percentage increase, of the second measure relative to the first measure, needed to meet the desired output level deviation/difference (in this case zero)." There is no "desired output level deviation/difference" that is to be reached. Rather, the amount of light output degradation is determined between the measurements and the pulse width is adjusted to compensate. The ***difference between the measurements is not compared to anything***. Consequently, Uebbing fails to show or suggest the concept of obtaining different measures of light output and comparing a difference between the measures with a <u>predefined difference threshold</u> as claimed in claim 1. In this respect, the Examiner has also failed to set forth a prima facie case of obviousness under §103(a).

B. <u>The Cited Prior Art Teaches Away from the Claimed Invention</u>

In addition, where the structure or text of prior art suggest something other than the instant invention, then they teach away from the invention and, ultimately, do not suggest the creation of the invention. Akzo N.V. v U.S. Intern. Trade Comm., 808 F.2d 1471 (Fed. Cir. 1986), *cert. denied*, 482 U.S. 909. Uebbing teaches away from the concept of actually comparing measured values obtained using different currents applied to an LED to a difference threshold to determine a saturation of sensors. Specifically, Uebbing teaches determining an amount of degradation in light output of LEDs between two measurements. It does not teach finding a saturation value of an LED by comparing a difference between two measured light outputs with a predefined difference value. To the extent that the Examiner points to Uebbing as suggesting that a difference in measurements be compared with some sort of difference threshold, the Examiner extends the teaching of Uebbing beyond what it fairly suggests. As a result, Applicants assert that any citation to Uebbing in rejecting the present claims can only be the product of hindsight reconstruction using the claims of the present application as a blueprint.

C. Lack of Motivation or Suggestion to Combine References

In addition, it is well settled that where multiple references are relied upon in combination for an obviousness rejection, there must be some teaching, suggestion, incentive or inference to make the proposed combination. Carella v. Starlight Archery, 804 F.2d 135, 231 USPQ 644 (Fed. Cir 1986). In citing motivation to combine Kerschner and Uebbing, the Final Office Action states:

> "It would have been obvious to one having ordinary skill in the art to modify the invention of Kerschner to include comparing the difference between first and second light outputs to the threshold to alter the current values by a predefined percentage, as taught by Uebbing, because while the invention of Kerschner requires a trial-and-error repetition method to obtain a desired output, the invention of Uebbing suggests a method that would quickly and accurately determine the required change in intensity, and corresponding current modification, with minimal time and effort (column 5, lines 1-32)." (Office Action, page 6).

Applicants assert that this statement is nonsensical in view of the plain teachings of Kerschner and Uebbing. Kerschner involves determination of a "white point" by comparing light outputs with a white value stored in a memory. If the sensor values do not equal the predefined white value, the duration of the pulse width applied to

the LEDs is adjusted until the white value is achieved. Uebbing discusses determining an amount of light output degradation of LEDs over a long period of time and the compensation for such degradation by adjusting the pulse width. How is it that Uebbing would suggest "a method that would quickly and accurately determine the required change in intensity" as the Examiner contends? The degradation calculation suggested by Uebbing is based upon the amount of time the LEDs are illuminated. How is it that a determination of the degradation of light output from LEDs over time is to be used to "quickly" determine the required pulse width of Kerschner to achieve sensor values that equal the predefined white value? It should be apparent that the cited motivation to combine the references of Uebbing and Kerschner by the Examiner is non-sensical when the teachings of Kerschner and Uebbing are considered. Accordingly, Applicant asserts that the cited motivation to combine the cited references can only be the product of impermissible hindsight reconstruction. Given that there is no motivation to combine at least Uebbing and Kerschner, Applicants assert that the cited combination is improper.

In view of the forgoing, Applicants once again assert that the cited rejection of claim 1 fails to show or suggest at least the step of "detecting a saturation of the sensors in the sensor array by comparing a difference between the first measure of the light output and the second measure of the light output with a predefined difference threshold." Rather, to generate the instant rejection of claims 1-20 under §103(a), the Examiner erroneously relies on the teachings of the specification of the present application, misinterprets the teachings of the specification upon which he erroneously relies, and misinterprets the teachings of Kerschner and Uebbing as suggesting the claimed elements of the present invention. In addition, the cited references teach away from the claimed invention and the Examiner fails to cite a legitimate motivation to combine the cited references. Accordingly, Applicants respectfully request the Board to overturn the Examiner's rejection of the claims.

D. Response to Examiners Assertions in the Advisory Action

With respect to various ones of the above assertions, in the Advisory Action of 8/22/03 the Examiner has made several assertions. For example, with respect to the

fact that the Examiner cites portions of the instant specification in generating the rejection of the claims as set forth above, the Examiner states:

> "In response, the Examiner first asserts that the instant specification is not used to teach the claimed invention. The claimed invention is taught by the combination of Kerschner, Roberts and Uebbing that teaches comparing the light intensity to detect a condition of the sensors reaching a white point/level indication a maximum white digital value. The instant invention specification only suggests the well-known relationship between a white level and saturation level."

The Examiner clearly relies on the assumption that the white point is the equivalent to the saturation point to reject the claims. In fact, by equating a "white point" to a "saturation point", the Examiner has effectively sidestepped the need to cite a reference that shows or suggests determining a saturation point as claimed. Applicants assert that citing the specification to support this assumption (all be it an incorrect assumption) is improper to the extent that such assumption forms the basis to reject the claims. Also, Applicants assert that statements that the relationship between the white level and the saturation level are "well-known" merely represent an attempt by the Examiner to create prior art where it does not exist in order to be able to reject the claims. In this regard, Applicants requested the Examiner to provide an affidavit to support such assertions to no avail. (see Response to Final Office Action of June 3, 2003, page 13).

The Examiner further states:

> "Secondly, it is unclear to the Examiner how Applicant can argue that "the rejection of the present claims is improper to the extent that the Examiner relies on the present specification as teaching that a saturation level of a sensor is the equivalent of the white point" because "elements of the claims must be shown or suggested in the prior art, not Applicants disclosure" if Applicant then argues that this teaching is not present in Applicants disclosure.

On this point, Applicants wish to clear up an apparent misunderstanding. First, Applicants assert that the elements of the claims must be suggested by the prior art references for a proper rejection under §103(a), and not Applicants specification as discussed above. The Examiner clearly relies on the assumption that the white point is the equivalent to the saturation point to reject the claims. Thus, Applicants assert that it is impermissible that the Examiner rely on the teachings in the instant specification to provide for suggestion of this assumption that is not taught by the prior art. In addition, Applicants assert that the Examiner's

assumption that the white point is the equivalent to the saturation point is incorrect. So, in summary, the Examiner incorrectly relies on the specification to provide complete suggestion to reject the claims, and in relying on the specification, the Examiner misinterprets its teaching.

In the Advisory Action, the Examiner further states:

> Thirdly, the Examiner maintains that since Kerschner disclosed comparing the light intensity to detect a condition of the sensors reaching a white point/level indicating a maximum white digital value, and since it is well-known in the art that the saturation levels of the light sensors correspond to the maximum white level, Kerschner also discloses using the comparison to detect when the white point/saturation level of the sensors is achieved. Applicant argues this conclusion stating it "is not founded in any teaching of Kerschner" and "since the detection of the saturation of the sensors is not shown or suggested by the cited references it is apparent that the rejection of claim 1 in this regard must be based upon the personal knowledge of the Examiner . . . Accordingly, Applicant expressly requests that either an affidavit be supplied by the Examiner as to the existence of facts or elements not shown or suggested by the references as descried above, or that one or more reference by cited that show such facts or elements." <u>The examiner maintains that the conclusion drawn above is founded in the cited prior art supplied with the final Office Action (see U.S. Patent Application Publication No. 2002/015098 to Kleiman, U.S. Patent No. 5,166,811 to Nagano, U.S. Patent Application Publication No. 202/0002410 to Tomita et al., and U.S. Patent No. 5,103,490 to McMillin</u>). (Advisory Action, emphasis added)

Once again, Applicants assert that the assumption that "it is well-known in the art that the saturation levels of the light sensors correspond to the maximum white level" is incorrect as discussed above. In attempts to provide the suggestion for such a proposition, the Examiner makes an eleventh-hour, general citation to all references cited in the Final Office Action, including those references not discussed in detail.

Applicant asserts that to maintain a proper rejection under §103, it is the obligation of the Examiner to state a prima facie case of obviousness in which all elements of the claims are suggested in the cited references. In addition, the Federal Circuit has held that "when the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in a reference." <u>In re Rijckaert</u>, 9 F.3d 1531, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). Applicant asserts that it is improper for the Examiner to make a generic eleventh-hour reference to

multiple references as teaching suggestion lacking in the Examiner's prima facie case of obviousness. Also, Applicants assert that the Examiner must particularly point out where in the cited references such suggestion exists.

## IX. CONCLUSION:

Applicant points out that independent claims 7, 13, 19, and 20 include limitations similar in scope with those of claim 1 discussed above, and that the remaining claims depend from claims 1, 7, or 13. In view of the foregoing, Applicants assert that claims 1-20 are in proper condition for allowance, and the Board is respectfully requested to overturn the Examiner's rejections of these claims.

Authorization is provided in the documents accompanying this Appeal Brief to charge Applicant's deposit account for the amount of $330.00 to cover the fee associated with filing this Appeal Brief. If any additional fees are required for this Appeal Brief to be considered, Applicant hereby authorizes the Board to charge any additional fee that may be required to deposit account 08-2025.

Respectfully submitted,

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## X. APPENDIX:

The claims as currently pending are as follows:

1. A method for determining a light output of a light emitting diode (LED) in a scanner, comprising:

applying a first current to the LED to generate the light output of the LED during a first time period;

obtaining a first measure of the light output of the LED during the first time period with a number of sensors in a sensor array;

applying an altered current to the LED to generate the light output of the LED during a second time period;

obtaining a second measure of the light output of the LED during the second time period with the sensors in the sensor array; and

detecting a saturation of the sensors in the sensor array by comparing a difference between the first measure of the light output and the second measure of the light output with a predefined difference threshold.

2. The method of claim 1, further comprising:

providing an LED current control circuit coupled to the LED; and

wherein the step of applying the first current to the LED and the step of applying the altered current to the LED further comprise manipulating the LED control circuit to generate the first and altered currents.

3. The method of claim 1, further comprising incrementing the first current by a predefined amount to obtain the altered current.

4. The method of claim 1, further comprising decrementing the first current by a predefined amount to obtain the altered current.

5. The method of claim 1, wherein the step of detecting the saturation of the sensors in the sensor array by comparing the difference between the first measure of the light output and the second measure of the light output with the predefined difference threshold further comprises calculating the difference by determining a percent increase of the second measure over the first measure.

6. The method of claim 1, wherein the step of detecting the saturation of the sensors in the sensor array by comparing the difference between the first measure of the light output and the second measure of the light output with the predefined difference threshold further comprises calculating the difference by determining a percent decrease of the second measure relative to the first measure.

7. A system for determining a light output of a light emitting diode (LED) in a scanner, comprising:

a processor circuit having a processor and a memory;

an LED current control circuit coupled to the processor circuit and the LED;

current control logic stored on the memory and executable by the processor, the current control logic comprising:

logic for directing the LED current control circuit to apply a first current to the LED for a first time period to generate a first measure of the light output of the LED during the first time period from a number of sensors in a sensor array in the scanner;

logic for directing the LED current control circuit to apply an altered current to the LED for a second time period to generate a second measure of the light output during the second time period from the number of sensors in the sensor array; and

logic for detecting a saturation of the sensors in the sensor array by comparing a difference between the first measure of the light output and the second measure of the light output with a predefined difference threshold.

8. The system of claim 7, wherein each of the sensors in the sensor array generate a signal representing the light output of the LED when illuminated thereby.

9. The system of claim 7, wherein the current control logic further comprises logic for incrementing the first current by a predefined amount, thereby generating the altered current.

10. The system of claim 7, wherein the current control logic further comprises logic for decrementing the first current by a predefined amount, thereby generating the altered current.

11. The system of claim 7, wherein the logic for detecting the saturation of the sensors in the sensor array by comparing the difference between the first measure of the light output and the second measure of the light output with the predefined difference threshold further comprises logic for calculating the difference by determining a percent increase of the second measure over the first measure.

12. The system of claim 7, wherein the logic for detecting the saturation of the sensors in the sensor array by comparing the difference between the first measure of the light output and the second measure of the light output with the predefined difference threshold further comprises logic for calculating the difference by determining a percent decrease of the second measure relative to the first measure.

13. A system for determining a light output of a light emitting diode (LED) in a scanner, comprising:

means for applying a first current to the LED for a first time period to generate a first measure of the light output of the LED from a number of sensors in a sensor array during the first time period;

means for applying an altered current to the LED for a second time period to generate a second measure of the light output from the sensors in the sensor array during the second time period; and

means for detecting a saturation of the sensors in the sensor array by comparing a difference between the first measure of the light output and the second measure of the light output with a predefined difference threshold.

14. The system of claim 13, wherein the sensors generate a signal representing the light output of the LED when illuminated thereby.

15. The system of claim 13, further comprising means for incrementing the first current by a predefined amount to obtain the altered current.

16. The system of claim 13, further comprising means for decrementing the first current by a predefined amount to obtain the altered current.

17. The system of claim 13, wherein the means for detecting the saturation of the sensors in the sensor array by comparing the difference between the first measure of the light output and the second measure of the light output with the predefined difference threshold further comprises means for calculating the difference by determining a percent increase of the second measure over the first measure.

18. The system of claim 13, wherein the means for detecting the saturation of the sensors in the sensor array by comparing the difference between the first measure of the light output and the second measure of the light output with the predefined difference threshold further comprises means for calculating the difference by determining a percent decrease of the second measure relative to the first measure.

19. A method for determining a light output of a light emitting diode (LED) in a scanner, comprising:

providing an LED current control circuit coupled to the LED;

providing a number of sensors in a sensor array, the sensors generating a signal representative of the light output of the LED when illuminated thereby;

manipulating the LED current control circuit to apply a first current to the LED for a first time period to generate the signal representing a first measure of the light output of the LED from each of the sensors during the first time period;

manipulating the LED current control circuit to apply an altered current to the LED for a second time period to generate a second signal representing a second measure of the light output from each of the sensors during the second time period; and

detecting a saturation of the sensors in the sensor array by comparing a difference between the first measure of the light output and the second measure of the light output for each of the sensors with a predefined difference threshold.

20. A system for determining a light output of a light emitting diode (LED) in a scanner, comprising:

an LED current control circuit coupled to the LED;

a number of sensors in a sensor array, the sensors generating a signal representative of the light output of the LED when illuminated thereby;

a processor circuit having a processor and a memory;

current control logic stored on the memory and executable by the processor, the current control logic comprising:

logic to direct the LED current control circuit to apply a first current to the LED for a first time period to generate a signal representing a first measure of the light output of the LED from each of the sensors during the first time period;

logic to direct the LED current control circuit to apply an altered current to the LED for a second time period to generate a second signal representing a second measure of the light output for each of the sensors during the second time period; and

logic to detect a saturation of the sensors in the sensor array by comparing a difference between the first measure of the light output and the second measure of the light output for each of the sensors with a predefined difference threshold to detect an optimum light output for each of the sensors.